

Claims

1. Optical fiber amplifier comprising a mono-mode core with a refractive index n_1 , a first cladding around said core with a refractive index n_2 and at least a further cladding around said first cladding with a refractive index n_3 while said first cladding including in cross section a ring with a refractive index n_4 doped with rare earth material surrounding said mono-mode core, wherein said first cladding shows at least partly a radial refractive index n_2 as a function of the radius being almost continuously decreasing.
2. Optical fiber amplifier according to claim 1, wherein said decreasing function is defined with a negative slope.
3. Optical fiber amplifier according to claim 1, wherein said ring shows an almost constant radial refractive index n_4 while the radial refractive index n_2 starts to decrease almost at the outer border of said ring.
4. Optical fiber amplifier according to claim 1, wherein said ring is almost directly adjacent to said mono-mode core.
5. Optical fiber amplifier according to claim 1, wherein said ring is partly included into said mono-mode core.
6. Optical fiber amplifier according to claim 1, wherein said ring is defined with a lower radius comprised around $3\mu\text{m}$ or $3.5\mu\text{m}$ and an upper radius comprised around $6\mu\text{m}$.
7. Optical fiber amplifier according to claim 1, wherein said first cladding shows an outer shape substantially concentric along the optical axis of said fiber.